
 SEARCH
[HOME](#)[EDUCATION](#)[REFERENCE](#)[DIRECTORIES](#)[COMMUNITY](#)[LINKS](#)**TOP DESTINATIONS**[Ads by Google](#)[Solar Power](#)[Energy Audit](#)[Energy News](#)[Energy Costs](#)[Energy Mit](#)[Ask the Experts](#)[Physics Job Board](#)[University Departments](#)[Einstein eGreetings](#)[Science eStore](#)**Question**

What is cosmic radiation? Is it dangerous?

Asked by: George T.

Answer


Cosmic radiation is a collection of many different types of radiation from many different sources. When people speak simply of 'cosmic radiation' they are usually referring specifically to microwave background radiation. This consists of very, very low energy photons (energy in Kelvin) whose spectrum is peaked in the microwave region and which are remnants from the time the universe was only about 200,000 years old. There are also very old remnant neutrino radiation. Neutrinos pass through just about everything with no effect so they are harmless. They are too low in energy to be dangerous.

On top of these there are higher energy particles that are being created constantly by a variety of sources in the universe. Photons of all different energies/wavelengths are being created by our sun, quasi-stellar objects, black-hole accretion disks, gamma-ray bursts and so on. These also produce high-energy massive particles such as electrons, muons, protons and anti-protons. These energy particles are potentially dangerous, but most of these particles never make it to the earth. They are deflected by magnetic fields between us and the source, or they interact with other particles and decay in flight.

The particles that do make it to the earth interact with our atmosphere, which acts as a shield. The high-energy cosmic rays bombard us all the time, but they interact quickly, producing much lower energy particles which impact the earth harmlessly. If this was dangerous to us, we would have to discuss these things! Some particles, like neutrinos and high energy muons, are passing through the time, but they interact so weakly that they have no effect on our bodies. Of course, if we were in space without the protection of our atmosphere then we would need some other type of protection from the radiation (spacesuits and protective covering on our spacecrafts).

The radiation to worry about, of course, is the 'cosmic' radiation produced by our sun. This type of cosmic radiation is known to adversely affect us and that's UV radiation from our sun which causes skin cancer in millions of people every year. Again, our atmosphere serves as a shield. Most photons do make it through -- and without that protective ozone layer which blocks the most harmful photons, we would all be going to need a lot more sunscreen!

Answered by: Brent Nelson, M.A. Physics, Ph.D. Student, UC Berkeley

Ads by Google 

4-Day Solar Sales Class

Training For
Experienced Sales
Reps New to
Solar. Includes
NABCEP Exam.
www.BootsOnTheRoof.co

Radiation Protection

Proguard
Radiation
Reducing Gloves
Discounts
Available. Check
us out!
www.zzmedical.com

"2009 Diet Of The Year:"

The #1 Ranked
Diet To Lose
Weight! As Seen
On CNN, NBC,
CBS & Fox News
www.Wu-YiSource.com

Radiation-XRay Protection

Quality Lead
shielding, radiation
protection for xray
rooms, CT scans
www.emmanuelprotectio

All rights reserved. © Copyright '1995-'200'

Radiation Protection

Proguard Radiation Reducing
Gloves Discounts Available. Check
us out!
www.zzmedical.com

Shielding Solutions

Neutron, Gamma, and X-ray
Shielding All Lead-Free Materials
www.radiationshieldingsolutions.co

"2009 Diet Of The Year:"

The #1 Ranked Diet To Lose
Weight! As Seen On CNN, NBC,
CBS & Fox News
www.Wu-YiSource.com

Radiation-XRay Protection

Quality Lead shieldi
protection for xray i
scans
www.emmanuelprot

